

"The coverage provides a broad introduction to the current literature of theoretical ecology and a superb integration of theory and fact. A must for every ecologist's library. The book will also serve as an engaging introduction for anyone interested in learning about the theoretical foundations of much of ecology."

Science

Robert May's seminal book has played a central role in the development of ecological science. Originally published in 1976, this influential text has overseen the transition of ecology from an observational and descriptive subject to one with a solid conceptual core. Indeed, it is a testament to its influence that a great deal of the novel material presented in the earlier editions has now been incorporated into standard undergraduate textbooks. It is now a quarter of a century since the publication of the second edition, and a thorough revision is timely.

Theoretical Ecology provides a succinct, up-to-date overview of the field set in the context of applications, thereby bridging the traditional division of theory and practice. It describes the recent advances in our understanding of how interacting populations of plants and animals change over time and space, in response to natural or human-created disturbance. In an integrated way, initial chapters give an account of the basic principles governing the structure, function, and temporal and spatial dynamics of populations and communities of plants and animals. Later chapters outline applications of these ideas to practical issues including fisheries, infectious diseases, tomorrow's food supplies, climate change, and conservation biology. Throughout the book, emphasis is placed on questions which as yet remain unanswered.

The editors have invited the top scientists in the field to collaborate with the next generation of theoretical ecologists. The result is an accessible, advanced textbook suitable for senior undergraduate and graduate level students as well as researchers in the fields of ecology, mathematical biology, environment and resources management. It will also be of interest to the general reader seeking a better understanding of a range of global environmental problems.

Robert May is Professor of Zoology at the University of Oxford and Imperial College London. His work on chaos, on how infectious diseases can influence the numerical abundance or geographical distribution of populations (including applications to humans and HIV/AIDS), on estimating species' numbers and rates of extinction, and more generally on conservation biology have been recognised by several major International Prizes (Crafoord, Balzan, Blue Planet). He has been Chief Scientific Adviser to the UK Government (1995–2000), President of the Royal Society (2000–2005), and in 2001 was one of the first appointees to the UK Upper House by the Independent House of Lords Appointments Commission.

Angela McLean is Professor of Mathematical Biology in the Department of Zoology and Director of the Institute for Emergent Infections of Humans in the James Martin 21st Century School at the University of Oxford. Her research interests lie in the use of mathematical models to aid our understanding of the evolution and spread of infectious agents.

Jacket photographs: FRONT PANEL: *Dandelion Line*, 2000, by Andy Goldsworthy. © The Artist. Courtesy of Cameron Books.
BACK COVER: © iStockphoto.

OXFORD
UNIVERSITY PRESS

www.oup.com

ISBN 978-0-19-920999-6



9 780199 209996